

- (b) Explain the disadvantages of demand segmentation. 5

Unit IV

7. Define a deadlock. List the necessary and sufficient conditions for a deadlock. Write an algorithm to detect deadlock when there are multiple instances of resources. 15
8. (a) Define a Semaphore. Describe the types of semaphores. 8
- (b) Draw and explain the distributed file system. 7

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Roll No.

18D2

B.Tech. EXAMINATION, 2024

(Fourth Semester)

(C Scheme) (Main & Re-appear)

(CSE)

CSE204C

OPERATING SYSTEMS

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. List *five* functions of distributed operating system from user's point of view and list five functions from system's point of view. **15**
2. Compare and contrast : **15**
 - (i) Multiprogramming and multiprocessing OS
 - (ii) Time sharing and Real time OS
 - (iii) Microkernel OS and Monolithic OS.

Unit II

3. Consider the following set of processes

Process	Burst time (ms)	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	5
P5	5	2

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The processes arrive in given order and at time 0.

Draw Gantt Charts illustrating the execution of processes using FCFS, SJF, non-pre-emptive priority and RR scheduling. Calculate turnaround time and waiting time of each process for each of the algorithm. **15**

4. (a) Explain multilevel feedback queue scheduling with suitable example. **10**
- (b) Briefly explain the different possible states of a process. **5**

Unit III

5. Define the term fragmentation. Compare and contrast internal and external fragmentation. Explain with the help of example, how external fragmentation can be solved with paging. **15**
6. (a) What do you mean by a page fault ? Describe the possible actions to be taken by the operating system when a page fault occurs. **10**

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P.T.O.